

IN THE CLAIMS:

Please cancel claims 1, 4-14, 16-24, and 26-34 without prejudice.

Please add new claims 41-56.

Please replace the claims as follows:

1-40 (Cancelled)

41. (New) A method for plating metal on a substrate, comprising:

providing a plating solution comprising:

copper ions at a concentration of between about 5 g/L and about 100 g/L;

an acid at a concentration of between about 5 g/L and about 200 g/L;

chloride ions at a concentration of between about 10 ppm and about 200 ppm;

sodium stannate at a concentration of between about 500 ppm and about 5000 ppm; and

at least one organic plating additive to enhance a plating characteristic of copper plating on the substrate; and

contacting a substrate having an electrical bias applied thereto with the plating solution to deposit a metal thereon.

42. (New) The method of claim 41, wherein the at least one organic plating additive comprises at least one of a leveler, a suppressor, and an accelerator.

43. (New) A method for plating metal on a substrate, comprising:

disposing the substrate and an anode in a plating solution, the plating solution comprising:

metal ions;

an acid;

halide ions;

one or more organic additives to enhance one or more plating characteristics; and

sodium stannate at a concentration of between about 500 ppm and about 5000 ppm; and

electroplating the metal ions from the plating solution onto the substrate.

44. (New) The method of claim 43, wherein the halide ions comprise chloride ions at a concentration of between about 10 ppm and about 200 ppm.

45. (New) The method of claim 43, wherein the acid has a concentration of between about 5 g/L and about 500 g/L.

46. (New) A method for plating metal on a substrate, comprising:

disposing the substrate and an anode in a plating solution, the plating solution comprising:

copper ions at a concentration of between about 5 g/L and about 100 g/L;

an acid at a concentration of between about 5 g/L and about 200 g/L;

chloride ions at a concentration of between about 10 ppm and about 200 ppm; and

sodium stannate at a concentration of between about 500 ppm and about 5000 ppm metal ions; and

one or more organic additives to enhance one or more plating characteristics; and

electroplating the metal ions from the plating solution onto the substrate.

47. (New) A plating solution for an electrochemical plating system, comprising:

a liquid solution containing copper ions at a concentration of between about 5 g/L and about 100 g/L;

an acid;

halide ions;

at least one organic plating additive to facilitate a plating characteristic of the copper ions onto the substrate; and

sodium stannate at a concentration of between about 500 ppm and about 5000 ppm.

48. (New) A plating solution for an electrochemical plating system, comprising:

a liquid solution containing copper ions at a concentration of between about 5 g/L and about 100 g/L to be plated on a substrate;

an acid at a concentration of between about 5 g/L and about 200 g/L;

chloride ions at a concentration of between about 10 ppm and about 200 ppm;

at least one organic plating additive to facilitate a plating characteristic of the copper ions onto the substrate; and

sodium stannate at a concentration of between about 500 ppm and about 5000 ppm.

49. (New) A method for reducing degradation of organic plating additives in an electrochemical plating solution, comprising adding sodium stannate to the electrochemical plating solution, the sodium stannate being added in an amount corresponding to a time varying amount of degraded organic plating additives generated in the electrochemical plating solution, wherein a concentration of the sodium stannate is between about 500 ppm and about 5000 ppm.

50. (New) A method for reducing degradation of organic plating additives in an electrochemical plating solution, comprising adding sodium stannate to the electrochemical plating solution, the sodium stannate being added in an amount corresponding to a time varying amount of degraded organic plating additives generated in the electrochemical plating solution, wherein the electrochemical plating solution is configured to plate copper and includes chloride ions in a concentration of between about 10 ppm and about 200 ppm.

51. (New) A method for plating metal on a substrate, comprising:

providing a plating solution comprising:

metal ions;

an acid;

halide ions;

one or more organic additives configured to enhance one or more plating characteristics; and

at least one anti-oxidant at a concentration between about 500 ppm and about 5000 ppm; and

depositing the metal ions from the plating solution onto the substrate.

52. (New) The method of claim 51, wherein the anti-oxidant is sodium stannate.
53. (New) The method of claim 51, wherein the anti-oxidant is butylated hydroxyl toluene.
54. (New) The method of claim 51, wherein the anti-oxidant is hydroquinone.
55. (New) The method of claim 51, wherein the amount of anti-oxidant added into the plating solution per unit time is calculated to correspond to an amount of organic additives degrading in the plating solution per unit time.
56. (New) The method of claim 51, wherein the amount of anti-oxidant is added in an amount corresponding to a time varying amount of degraded organic plating additives generated in the electrochemical plating solution